Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Geometry Chapter 5 Practice Test

____ 1 K is between J and L. $JK = 3x - 5$, and $KL = 2x + 1$. If $JL = 16$, what is JK?

A. 7
B. 8
C. 9
D. 13

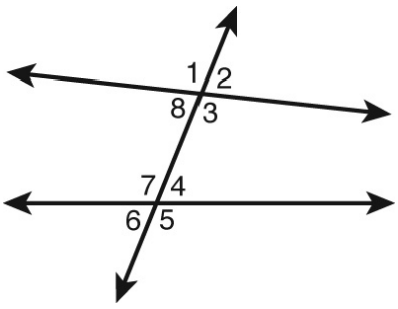
____ 2 What is the area of a circle whose diameter is 3 centimeters?

A. 1.5π cm^2
B. 2.25π cm^2
C. 6π cm^2
D. 36π cm^2

____ 3 Complete the statement.
Two lines are parallel if the same-side interior angles are _____ angles.

A. complementary
B. supplementary
C. congruent
D. corresponding

____ 4 Which angles are alternate interior angles?



A. $\angle 1$ and $\angle 4$
B. $\angle 1$ and $\angle 5$
C. $\angle 3$ and $\angle 4$
D. $\angle 3$ and $\angle 7$

____ 5 What is the slope of the line perpendicular to $y = -\frac{3}{2}x + 9$?

A. $\frac{3}{2}$

B. $\frac{2}{3}$

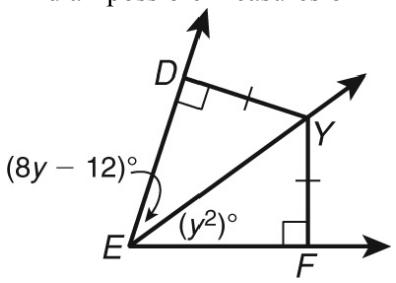
C. $-\frac{2}{3}$

D. $-\frac{3}{2}$

6 In $\triangle ABC$, B is on the perpendicular bisector of $\overline{AC}$, $m\angle A = (6x + 14)°$, and $m\angle ABC = (10x - 2)°$. Find $m\angle C$.

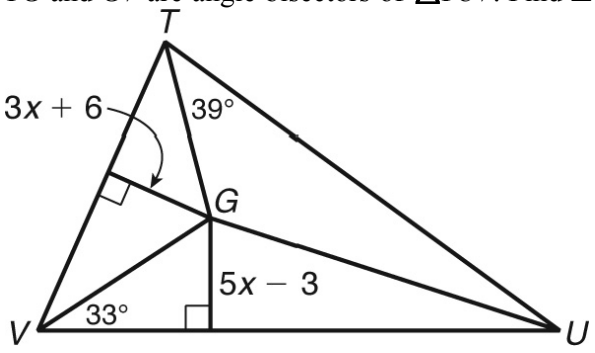
7 Write an equation in point-slope form for the perpendicular bisector of the segment with endpoints $(2,4)$ and $(6,2)$.

8 Find all possible measures of $\angle DEF$.



9 Find the center of the circle circumscribed about the triangle with vertices $(0,0)$, $(8,0)$, and $(6,4)$.

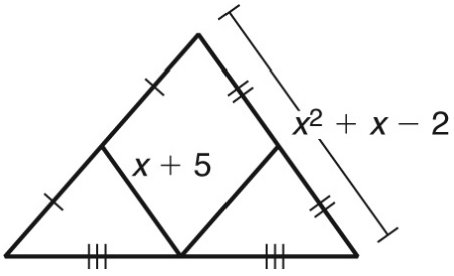
10 $\overline{TG}$ and $\overline{GV}$ are angle bisectors of $\triangle TUV$. Find $\angle VGT$ and the distance from G to $\overline{UV}$.



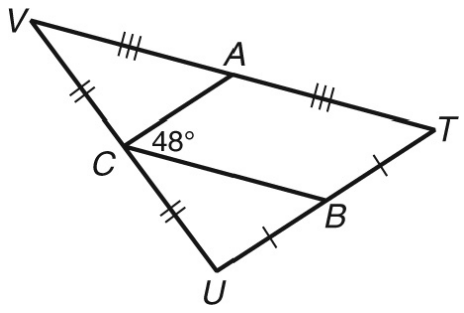
11 Find the coordinates of the centroid of the triangle with vertices at $(-4,2)$, $(1,2)$, and $(6,3)$

12 Find the coordinates of the orthocenter of $\triangle TUV$ with $T(0,0)$, $U(4,4)$, and $V(1,7)$

13 Find the value of x.



14 What is m$\angle TAC$?

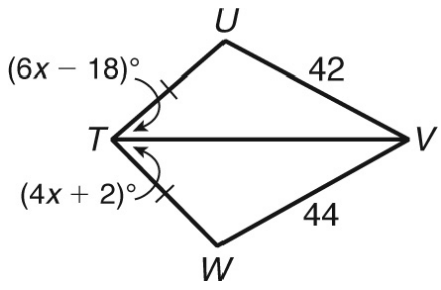


15 Use indirect reasoning to explain why an obtuse triangle cannot have a right angle.

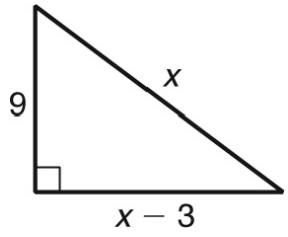
16 The lengths of two sides of a triangle are 7 and 12. Find the range of possible lengths for the third side.

17 List the angles of ΔKLM with vertices $K(-2,-2)$, $L(2,6)$, $M(7,-2)$ in order from smallest to largest.

18 Find the range of values for x.



19 Determine the side lengths of the triangle.



20 Write *True* or *False*. Multiplying each number of a Pythagorean triple by a nonzero whole number yields another Pythagorean triple.

21 The longest side of a triangle is 13 centimeters. Another side is 11 centimeters. If the triangle is obtuse, write an inequality for the range of values for the third side.

22 Determine the perimeter of a square with a diagonal of $\sqrt{72}$ centimeters.

23 Find the area of a $30° - 60° - 90°$ triangle with hypotenuse length of 48 inches.

Geometry Chapter 5 Practice Test
Answer Section

1 ANS: A PTS: 1 DIF: 2 TOP: Cumulative Test, Chapter 5
MSC: DOK 2

2 ANS: B PTS: 1 DIF: 2 TOP: Cumulative Test, Chapter 5
MSC: DOK 2

3 ANS: B PTS: 1 DIF: 2 TOP: Cumulative Test, Chapter 5
MSC: DOK 1

4 ANS: D PTS: 1 DIF: 2 TOP: Cumulative Test, Chapter 5
MSC: DOK 1

5 ANS: B PTS: 1 DIF: 2 TOP: Cumulative Test, Chapter 5
MSC: DOK 2

6 ANS:
$56°$

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 2

7 ANS:
$y-3=2(x-4)$

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 2

8 ANS:
$72°$ or $8°$

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 2

9 ANS:
$\left(4, \frac{1}{2}\right)$

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 2

10 ANS:
$m\angle VGT = 108°$; the distance from G to $\overline{UV} = 19.5$.

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 2

11 ANS:
$\left(1, 2\frac{1}{3}\right)$

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 2

12 ANS:
$(4, 4)$

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 2

13 ANS:
4 or −3

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 2

14 ANS:
132°

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 2

15 ANS:
Let $\triangle ABC$ be an obtuse triangle with $\angle A$ as its obtuse angle. Suppose $\triangle ABC$ has a right angle, say $\angle B$. Since $m\angle A > 90°$ and $m\angle B = 90°$, and since it must be true that $m\angle C > 0°$, it follows that $m\angle A + m\angle B + m\angle C > 180°$. This last inequality contradicts the Triangle Sum Theorem. The assumption that an obtuse triangle can also contain a right angle is therefore false.

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 3

16 ANS:
$5 < s < 19$

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 2

17 ANS:
$\angle M$, $\angle L$, $\angle K$

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 2

18 ANS:
$3 < x < 10$

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 2

19 ANS:
9, 12, and 15

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 2

20 ANS:
True

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 1

21 ANS:
$2 < x < 4\sqrt{3}$

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 2

22 ANS:
24 cm

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 2

23 ANS:
$288\sqrt{3}$ in^2 or about 498.8 in^2

PTS: 1 DIF: 2 TOP: Chapter 5 Free Response Test, Form C
MSC: DOK 2